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The Next Generation Of U.S. Farm Policies

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   A. Fine tune the present

      i. cost saving - put limit on FOR, e.g., 10% of disappearance. Limit land diversion to 10% of capacity, lower loan rate, use more cash land diversion relative to FOR and PIK

ii. raise efficiency - use more bids, for diversion and PIK, vary program yields more among land classes, target diversion within farm to the more erosive land, announce program in September - prevent production. Don't store surplus over estimated need.

B. More government supply control

Limit production to demand at cost of production. More CCC owned stocks, reinstate call level on FOR; tax tons of top soil eroded to produce surplus, similarly tax ground water depletion to product surplus, tax N & P fertilizer used to produce surplus. Use referendum and impose quotas if majority accept. Require cross compliance in supply control if farmer in FmHA, ACP, FOR, Crop Insurance, Federal marketing orders, etc.

C. Less government intervention so more demand oriented.

Let market clear, re-emphasize deficiency payment or institute negative income tax, reduce target price, put $50,000 payment limit per family, lower the loan rate to just over variable costs (approximately $1.60 per bushel on corn).

6. Impacts of above three alternatives on:

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7. Summary

The Next Generation of U.S. Farm Policies

to be presented by Lee Kolmer

I. Introduction

Clearly U.S. agriculture has excess capacity. U.S. consumption plus foreign sales were 5-10% less than production in 1981 and 82. Except for massive and expensive supply control, 1983 production would similarly exceed the weak current demand. Stocks of corn and rice at the end of the current marketing year will be about 50% of this year's utilization. For wheat and cotton the carryover into next year will be about 70% of this years' disappearance.

United States large agricultural capacity is a valuable national asset. Besides fully supplying the U.S. population, U.S. agriculture earns more than twice enough foreign exchange to pay for all the coffee, sugar, bananas and other agricultural imports to the U.S. Total U.S. merchandize trade deficit in 1983 may be about 40 billion.

However, both farmers and taxpayers find it costly to carry the large U.S. agricultural capacity through periods, like now, when it cannot be fully employed. In 1981 U.S. agriculture was allowed to fully produce and the weather provided two good crops. Between weak demand and little 1982 supply control, grain prices fell below total cost of production but were kept above variable costs by price supports. By fall of 1982 it was clear that within a year stocks would accumulate beyond expected future need. Excessive 1982 production was kept off the market largely because of the attractiveness of the the farmer-owned reserve. To control 1983 production significantly below demand and reduce excess stocks, PIK was offeredin conjunction with a paid land diversion program. This combination was the most expensive farm program in our history.

Many agri-business groups in Iowa have been hurt by weak demand, excess capacity, low farm prices and supply control. Most Iowans would prefer restoration of full employment for agriculture at prices that would cover costs of production. This solution is dependent upon absorption of substantial supplies of agricultural commodities in world trade which in turn is heavily influenced by U.S. and foreign macro economic policy.

In 1982 many full time grain farmers, especially those trying to expand rapidly, found themselves dangerously short of cash; some were even unable to meet fixed debt obligations. In 1983 many livestock feeders, grain elevators and farm supply businesses are finding that gross margins will not cover expenses and debt service. They will have a cash flow shortage as a direct result of storage and supply control policies.

Information available at this time indicates that the total cost to the taxpayer of 1982 excess production and 1983 supply control may total $30 billion. If so, we may be in the middle of a very expensive U.S. agricultural farm program. However, direct costs of maintaining federal agricultural programs should be considered in juxta position with food and fiber costs to consumers. Although the political consequences may not be comparable, high food prices and low program costs may exact the same overall cost as low food prices and high program costs. The burdens, however, may differ significantly. However, there may be significance differences in efficiency between the two polar extremes.

These constitute highly important policy questions for the Congress.

II. The Macroeconomic Enviroment and Macroeconomic Policies: Their Effect upon Agricultural Prices and Incomes

Dennis Starleaf

Overview

From the end of World War II through the 1960s, the U.S. agricultural sector operated in a macroeconomic environment which, by today's standards, was uncomplicated and highly stable:

- agricultural production was predominantly directed toward the domestic market, in that exports through commercial channels were small.
- The macroeconomic policies -- monetary and fiscal -- of the Federal government exhibited a great deal of consistency over time.
- The rate of inflation was low (except in the late 1940s and, to a much lesser extent, during the late 1960s).
- Business cycle contractions were generally mild and of short duration.
- Federal agricultural price-support programs further contributed to reducing year-to-year variability in the prices of most U.S. agricultural products.

Since the early 1970's U.S. agriculture has operated in a much different macroeconomic environment:

- Exports have become a significant portion of the total demand for U.S. agricultural products and export demands have proved to be variable.

- Monetary policy has become erratic. At times, the money supply growth rate has been increased dramatically in order to stimulate aggregate demand and to reduce the unemployment rate. At other times, it has been reduced sharply to lower the inflation rate.
- The rate of inflation has generally been high by the standard of U.S. historical experience and it has also exhibited a great deal of variability.
- Two rather long and quite severe business cycle contractions (1974-75 and 1981-82) were experienced. Furthermore, there was virtually no expansion in the aggregate real output of the U.S. economy from mid-1979 through the end of 1982.
- Federal agricultural price-support programs were generally relaxed so that agricultural prices became more subject to the effects of short-run shifts in demand and supply.

Review of the Macroeconomic Environment From 1970 to 1978

Between 1969 and 1972, the December-to-December growth rate of the U.S. M1 money supply was increased from 3.2 to 9.2 percent per year. This was an extraordinary inflationary action on the part of the Federal Reserve authorities. As a result, inflationary pressures became so great in the United States in 1973 that the Federal government had to abandon its system of wage and price controls (which had been put in place in mid-1971), there was a general "flight from the U.S. dollar" abroad, the Bretton-Woods system of fixed exchange rates collapsed, and the dollar dropped in value in terms of European currencies by about 20 percent.

These events plus generally poor crop production throughout the world (except in the United States) caused U.S. agricultural exports to rise sharply and U.S. net farm income (deflated by the Consumer Price Index) to more than double between 1970-71 and 1973. They also caused the inflation rate in the United States to rise into the "double digit" range.

The Federal Reserve authorities then adopted a tight money policy. Between 1972 and 1974, the December-to-December M1 money supply growth rate declined from 9.2 percent to 4.4 percent per year. This rapid shift in monetary policy from highly inflationary to disinflationary appears to be the principal cause of the longest and most severe business cycle contraction experienced by the U.S. economy in the post-World War II period up to that time (that of 1974-75). It also had its desired affect of reducing the rate of inflation -- by 1976, the rate of inflation (by all measures) was less than 5.0 percent per year. It also caused the foreign-exchange value of the U.S. dollar to stabilize.

Partly because of the depressed domestic market for U.S. agricultural products and partly because of improved crops abroad, between 1973 and 1976, net farm income (deflated by the Consumer Price Index) fell by about 60 percent.

Following the recession of 1974-75, the U.S. economy expanded strongly. During each of the years from 1975 through 1978, real (i.e., inflation adjusted) GNP rose by more than 5 percent and employment rose by about 4 percent. This rapid expansion was partly due to a generally permissive fiscal policy (although the Federal budget was nearly balanced by early 1979), but it was mainly due to an easy monetary policy. Between 1975 and

1978, the M1 money supply growth rate increased from 4.9 percent to 8.3 percent per year. During this same time period, real (i.e., adjusted for inflation) net farm income rose modestly.

The 1975-78 expansion in the U.S. economy was so vigorous that by 1978 the inflation rate was once again pushing into the "double digit" range and the U.S. dollar was rapidly falling in value in terms of European currencies.

A Review of the Macroeconomic Environment Since 1978

By early 1979, it was obvious that something had to be done to curtail the growth rate of dollar spending for the output of the U.S. economy, less the inflation rate be pushed even higher. Consequently, the Federal Reserve authorities adopted a tight money policy. Under this policy the growth rate of the M1 money supply was reduced from an annual rate of 8.2 percent in 1978 to 3.8 percent in the first half of 1982.

The purpose of the tight money policy was to reduce the rate of inflation. But the way a tight money policy works should be obvious to all by now. It drives up interest rates, curtails private borrowing and, thereby, curtails spending for the output of the economy.

But the reduced rate of growth of dollar spending for the output of the economy does not immediately cause a reduction in the rate of inflation. This is because, once established, inflation takes on something of a life of its own -- it gets built into human behavior concerning wage and price increases.

Consequently, when the growth rate of dollar spending drops off, inflation temporarily continues at its previous rate or even increases,

while real (i.e., adjusted for inflation) spending for the output of the economy is curtailed and the economy generates excess productive capacity. With the rise in excess capacity and the unemployment rate, the rate of wage and price increases slowly drops off.

This is precisely what occurred during the 1979-82 period. The tight money policy reduced the rate of growth of dollar spending for the output of the economy, but the inflation rate responded sluggishly to this development. Consequently, the real output of the economy exhibited no real expansion between mid-1979 and late-1982 and we experienced a short recession in 1980 and a long recession in 1981-82.

The agricultural sector was also clearly affected. On the one hand, the lack of expansion in the U.S. economy slowed the growth of consumer incomes and thus slowed the growth of domestic demand for agricultural products. On the other hand, the tight money policy, by pushing up domestic interest rates, attracted a flood of foreign financial capital, which in turn raised the value of the U.S. dollar (in terms of European currencies) by about 20 percent between 1979 and 1981. As a result, the foreign demand for U.S. agricultural products dropped sharply and net farm income (deflated by the Consumer Price Index) fell from $14.9 billion in 1979 to $9.2 billion in 1981.

All of this was compounded by the tax cut of 1981. Tax rates were cut very substantially in 1981 while overall there was no cut in the rate of growth of Federal expenditures. (Indeed, the rate of growth of Federal expenditures in real terms [i.e., adjusted for inflation] was larger under the budget proposals of the Reagan administration than was the case during

the late-1970s). This has produced mind-boggling Federal fiscal deficits in the neighborhood of $200+ billion per year for the foreseeable future. The 1981 tax cuts were expected to induce capital spending but the tight money policy being pursued, and weak demand combined to reduce total private capital spending.

The combination of an extremely easy (inflationary) fiscal policy plus a tight monetary policy produced very high real interest rates (i.e., the nominal or actual interest rates which people pay or receive less the rate of inflation). (see Fig. 1A) This in turn caused the exchange-value of the U.S. dollar to rise further. (see Fig. 1C) By late-1982 or early-1983, the value of the U.S. dollar in terms of European currencies was up about 40 percent from what it had been in 1979. This has greatly depressed the demand for U.S. agricultural exports and, undoubtedly, is the major explanation for the decline in real (i.e., deflated by the Consumer Price Index) net farm income to $6.7 billion in 1982 and the weakening of U.S. trade balance (see Fig. 1D).

The Macroeconomic Outlook for the Future

The macroeconomic outlook for the U.S. economy is "bullish" for the near future. Since mid-1982, the U.S. M1 money supply has been growing at an annual rate of about 14 percent. This highly stimulative (inflationary) monetary policy, combined with a highly stimulative (inflationary) fiscal policy, will cause the U.S. economy to expand very vigorously at least through mid-1984.

The near term outlook for U.S. agriculture is not nearly so "bullish." Extremely high Federal budget deficits are likely to keep real interest

rates high in the United States, attract foreign financial investment into the United States, and thus keep the exchange value of the dollar high. This will make any significant improvement in the export demand for U.S. agricultural products unlikely within the next year or so, baring a major foreign agricultural disaster.

The outlook for the U.S. economy beyond the next 12 months is dependent upon both monetary and fiscal policies. Unless the rate of M1 money supply growth is cutback greatly within the next year, another dose of "double digit" inflation seems inevitable. And unless the President and the Congress significantly reduce the projected growth rate of the Federal budget deficit, the U.S. economy is unlikely to grow in the future as it has in the past. The President and the Congress need to understand that private capital accumulation which is the engine of growth is only possible when the national net saving rate is positive. Federal budget deficits are a negative component and subtract from other national net saving. (Projected Federal deficits for the next several years are nearly equal to the projected saving of the U.S. private economy.)

The outlook for the U.S. agriculture sector is also troublesome for the future beyond the next year or so. A revival of "double digit" inflation would give temporary relief to the current problems of farmers, but this would likely be followed by another period of disinflationary policy with a repeat of the 1981-83 weak demand and excess capacity impact upon agriculture. If Federal budget deficits continue on their current projected path, U.S. agriculture exports will not grow in the future -- they will decline.

For the long-run health of the total U.S. economy, as well as that of the U.S. farm economy, two macroeconomic policy measures are necessary:

First, monetary policy must become more consistent over time. This means that the Federal Reserve authorities must abandon their practice of the last 12 years or so of periodically expanding the rate of money supply growth and then contracting it. We need to get off the roller coaster of inflationary and then disinflationary monetary policy actions in favor of a more nearly constant growth rate of the money supply.

Second, the President and the Congress need to abandon their recently-acquired infatuation with deficit spending. For the U.S. farm economy in particular, a return to the attitude of the 1970s toward deficit spending (i.e., large Federal budget deficits were to be tolerated only when the economy was in recession) would be a very important positive event.

III. Reduced Foreign Demand for U.S. Farm Products is the Major Explanation for of Excess Capacity in U.S. Agriculture

Bob Wisner

The value of U.S. farm product exported is declining this season for the second consecutive year. This news brought shock waves across the U.S. agricultural sector in 1982 and early 1983. While export earnings remain huge in comparison with a decade ago, weaker foreign demand has cut U.S. net farm income, sales of farm supply industries, volume of grain transportation and handling and employment of workers in rural areas and industries related to agriculture. Recent projections indicate U.S. agricultural exports in the 1982-83 fiscal year (October-September) will total $35 Billion. That represents a 10 percent decline from the previous fiscal year and a 20 percent drop from the peak level in 1980-81.

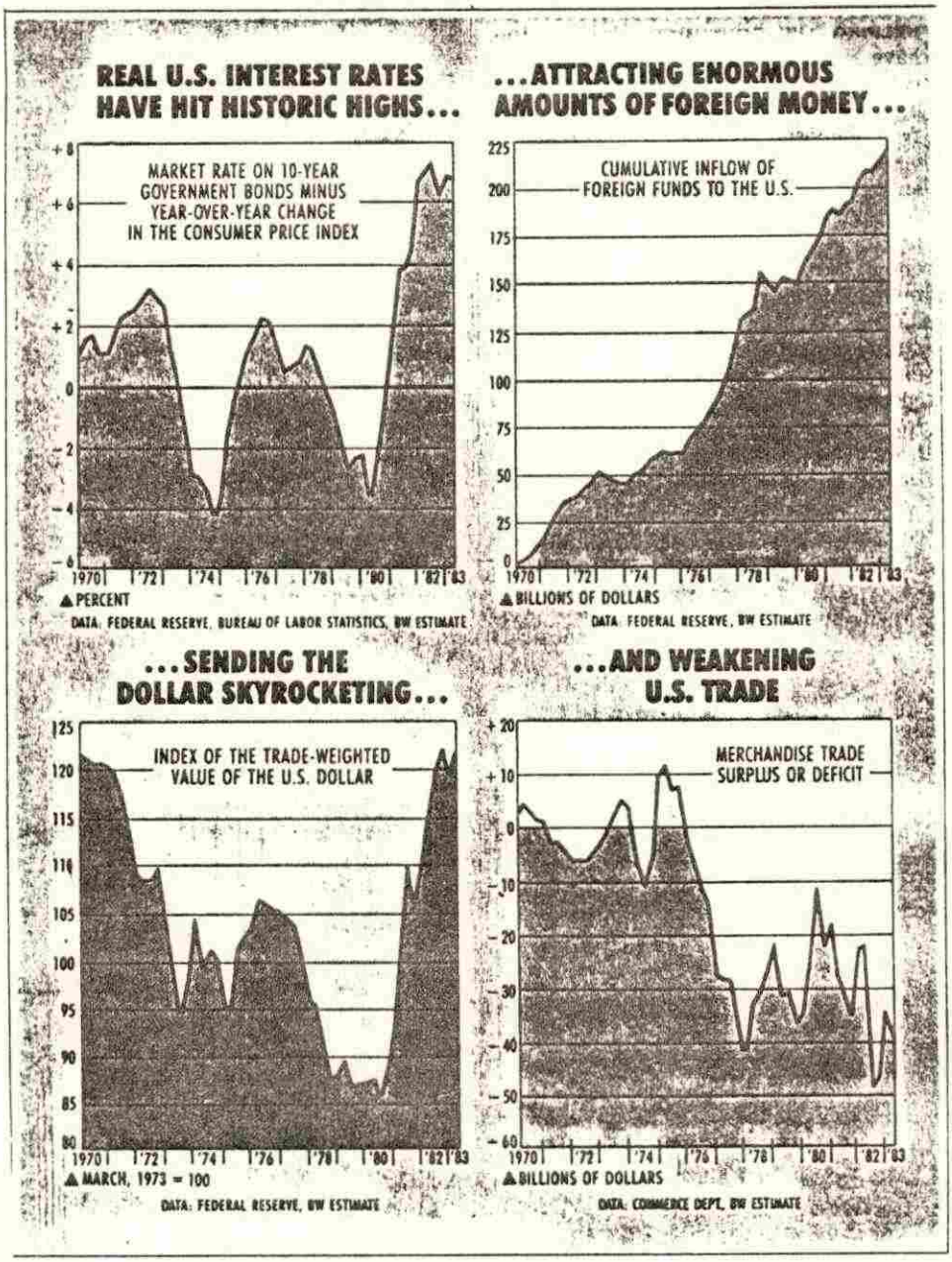
Rising world stocks placed sharp downward pressure on world feed grain and oilseed prices in late 1982. But by spring 1983, world feed grain prices had recovered to the highest level since early 1981. Higher prices were due to heavy farmer participation in the U.S. Payment-In-Kind and U.S. Grain Reserve Programs. The Payment-In-Kind Program may reduce 1983 world grain production modestly, but with normal growing conditions aggregate world supplies are expected to be fully adequate to meet market demand.

Financial Developments Restraining U.S. and World Trade

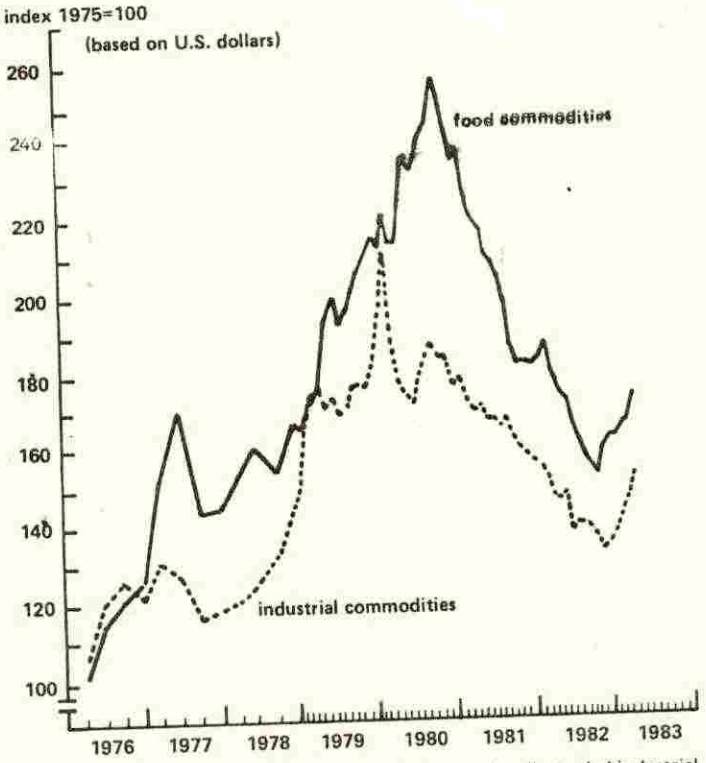
Key factors behind the recent world wide weakness in prices of farm product exports (see Fig. 2) include (1) recent strength of the U.S. dollar and (2) debt burdens of several important grain importing and exporting nations. These developments are related to U.S. and foreign monetary and fiscal policies.

In the early 1970's, as the dollar fell in value, foreign buyers of farm products could obtain more U.S. dollars for their currency than previously. That dramatically lowered the cost of U.S. agricultural products in many foreign markets, and contributed to the upward explosion of American farm exports from 1972 to 1980. By the end of 1979, however, the U.S. Federal Reserve System began restraining money supply growth in an effort to curb inflationary pressures. This restraint along with the resulting high U.S. interest rates (Figure 1A), tax policies aimed at encouraging U.S. domestic investment and other factors brought a flow of funds into the U.S. for investment purposes (Figure 1B). The in-flow of funds has substantially strengthened the U.S. dollar against most foreign currencies in the last two and one-half years (Figure 1C). A stronger dollar increases foreign buyers' costs of purchasing U.S. (Figure 2) products, thus retarding export demand (Figure 1D).

With the stronger dollar, prices to foreign buyers have declined much less in the past two and one-half years than in U.S. cash markets. And in many foreign markets, prices to foreign users have actually increased substantially while U.S. prices were declining.


REAL U.S. INTEREST RATES HAVE HIT HISTORIC HIGHS...
MARKET RATE ON 10-YEAR GOVERNMENT BONDS MINUS YEAR-OVER-YEAR CHANGE IN THE CONSUMER PRICE INDEX
+8
+6
+4
+2
0
-2
-4
-6
1970 '72 '74 '76 '78 '80 '82 '83
▲ PERCENT
DATA: FEDERAL RESERVE, BUREAU OF LABOR STATISTICS, BW ESTIMATE
...ATTRACTING ENORMOUS AMOUNTS OF FOREIGN MONEY...
CUMULATIVE INFLOW OF FOREIGN FUNDS TO THE U.S.
225
200
175
150
125
100
75
50
25
0
1970 '72 '74 '76 '78 '80 '82 '83
▲ BILLIONS OF DOLLARS
DATA: FEDERAL RESERVE, BW ESTIMATE
...SENDING THE DOLLAR SKYROCKETING...
INDEX OF THE TRADE-WEIGHTED VALUE OF THE U.S. DOLLAR
125
120
115
110
105
100
95
90
85
80
1970 '72 '74 '76 '78 '80 '82 '83
▲ MARCH, 1973 = 100
DATA: FEDERAL RESERVE, BW ESTIMATE
...AND WEAKENING U.S. TRADE
MERCHANDISE TRADE SURPLUS OR DEFICIT
+20
+10
0
-10
-20
-30
-40
-50
-60
1970 '72 '74 '76 '78 '80 '82 '83
▲ BILLIONS OF DOLLARS
DATA: COMMERCE DEPT, BW ESTIMATE

Price indexes of major internationally traded commodities*



*Compiled by *The Economist* for 19 internationally traded industrial raw materials--excluding petroleum--and 16 food commodities.

Policy Issues in World Food Trade

Global food and agricultural policies will impact heavily on American farmers the rest of this decade. In fact, trade-related policies appear to be more important to U.S. agriculture now than in the past two decades. Important trade issues include monetary and fiscal policy and exchange rates, embargoes, export subsidies, import restrictions, supply management, agricultural development, bilateral trade agreements, global food security and alternatives for financing imports of developing nations. The current weakness in U.S. and world food exports is strongly related to monetary and fiscal conditions. Attention to this area is likely to be most effective in improving the longer term performance of American farm product exports.

Monetary and Fiscal Policies

U.S. agricultural exports are being restrained by debt burdens of several developing and middle income nations. Numerous factors contributed to the build-up of excessive debts including (1) unrealistic expectations about future demand growth and inflation rates in developed nations, (2) substantial growth of the U.S. money supply in the 1970's and a plentiful supply of funds available for loans to developing nations, and (3) recent change in U.S. and foreign monetary and fiscal policies that have generated high interest rates, a slowdown of economic growth in industrial nations and a strong U.S. dollar. With widespread use of variable-interest loans, high real interest rates have made developing nations' debts more burdensome than originally anticipated. In addition, developed nations are the major market outlet for products of the developing world. A slowdown in economic growth of major industrial nations has contributed to the debt

burdens of potential foreign customers for U.S. farm products by slowing the growth in demand for their economic output.

To safely resolve current debt problems, moderation and patience will be required. It appears likely that the next few years will be a period of global adjustment and consolidation of debts with world food trade growing more slowly than in the 1970's. World economic growth also appears likely to be less robust than in the last decade, but would accelerate in the late 1980's as debt pressures diminish. Future growth rates will depend heavily on policy actions taken in the next two years.

Embargoes

U.S. has not been the only nation to halt exports of farm products in recent years. Exporters such as Brazil, Argentina, Canada, Australia and Thailand often halt sales of agricultural commodities because of limited supplies. Exportable supplies from these nations individually are much smaller than those of the U.S. and such embargoes generally have little market impact. However, the U.S. is by far the largest exporter of wheat, coarse grains and soybeans, and a U.S. embargo has much larger effects on world trade patterns. Embargoes distort market signals to U.S. and foreign producers. In some cases, U.S. trade restrictions may encourage increased domestic production by importing nations. Without strong cooperation from other exporting countries, embargoes have been ineffective in restricting total imports of an individual country. For these reasons, trade embargoes are undesirable from an economic viewpoint.

Recent legislation provides U.S. agriculture with substantial protection against trade embargoes except in cases of national emergencies.

This legislation is likely to reduce but not completely eliminate the possibility of U.S. export embargoes in the years ahead.

Trade Subsidies

Trade subsidies are used by some nations as a means of reducing domestic surpluses or increasing their share of global trade. With declining world grain exports in 1982-83, surplus supplies in the European Economic Community (EC) and U.S. have generated increased pressure for use of trade subsidies. Trade subsidies can accomplish their objectives only if (1) they are targeted to countries otherwise lacking purchasing power or (2) they cause competing countries to reduce production or increase carryover stocks. Trade subsidies may create a trade war with increasing costs to taxpayers as each country matches the other's increasingly larger subsidies in an attempt to obtain a larger share of the market. In the current U.S.-EC subsidy situation, the U.S. has obtained substantial 1982-83 flour sales to Egypt at EC's expense, but lost wheat sales to EC in China.

Trade subsidy impacts on production of developing nations also should be considered. Heavily subsidized exports to developing countries can decrease incentives to expand production in recipient nations. In the longer-run, large scale use of such subsidies could thus have disadvantages for some developing countries. With these potential negative aspects, it seems advisable to use trade subsidies with substantial caution. They should not be expected to solve current weakness in export demand that stem from world economic problems.

Bilateral Trade Agreements

In 1976, the U.S. entered into its first five-year grain trade agreement with the Soviet Union. With Russia often being one of the world's largest importers of grain and with large year-to-year variations in import needs, potential disruptions in grain market were ever-present. To reduce uncertainty about Soviet purchases, the U.S.-USSR grain agreement provided for specific minimum and maximum quantities to be sold annually by the U.S. to USSR. U.S. also has negociated similar agreements with Mexico and the People's Republic of China.

Bilateral agreements are intended to provide importing nations with an assured quantity of grain regardless of world market conditions. In that sense, they tend to by-pass the normal market functions of discouraging utilization when world supplies are limited and encouraging utilization when supplies are large. As an increasing share of global grain trade is brought under such agreements, one can expect more severe adjustment burdens in countries which rely on relatively free market conditions to balance changing supplies with demand. A similar impact stems from the EC variable levy and high internal price support system for wheat and coarse grains. The system to a large extent insulates EC grain users from variations in world supplies. These and other policies which reduce needed utilization adjustments by large grain users tend to magnify the adjustment burden faced by U.S. and certain developing nations. From a policy standpoint, it is questionable whether widespread global use of trade agreements is desirable for American agriculture. However, a case might be made that such agreements are appropriate with the Soviet Union because of its centralized

government purchasing agency and a resulting potential for large unexpected fluctuations in its imports.

Food Security

Despite burdensome grain carryover stocks in the U.S., food security remains an important and complex policy issue for much of the developing world. The geographic distribution of inventories is important for the food security of developing nations, and also affects prices paid to producers in the U.S. and other exporting nations.

Unresolved issues in world food security include (1) the desired size of reserve stocks both globally and in individual countries, (2) methods of sharing storage costs, (3) procedures for timing the acquisition and release of reserve stocks, and (4) impacts of reserve stocks on producers in both importing and exporting nations. With the differing viewpoints of producers, consumers, exporters, and importers of food, the prospects for a large-scale unified world food reserve system remain clouded.

Trade Protectionism

The sluggish world economy, high unemployment levels and declining world trade have generated increasing global pressures for protection against import competition. In the U.S., examples of protectionist pressure include recent restrictions on textile imports and discussions of further restrictions on imports of foreign autos and steel. In responding to these pressures, policy makers should note the experience with protectionism in the early 1930's. Similar world economic conditions led to passage of the Hawley-Smoot Tariff in the U.S. in 1930. This act provided high tariffs on

U.S. imports and was one of several factors contributing to a substantial decline in global trade and economic activity. Import restrictions tend to discourage trade by restricting the ability of nations to earn foreign exchange for buying other country's products.

Other Policy Areas

Other policy areas of current concern include procedures for balancing global grain production and utilization, strategies for encouraging agricultural development in developing nations and methods of financing imports in the developing world. It appears that most of the production adjustment to match declining world trade will be done by the U.S. From a U.S. viewpoint, it would be desirable to have the adjustment burden shared by other exporting nations. But so far, no mechanism has been developed to do so. The future of food production and trade in the developing world will depend heavily on its access to financing, not only for imports but also for economic development. Developed nations and world monetary authorities face a major challenge in the years immediately ahead in finding creative ways to finance these needs.

IV. Domestic Demand for Farm Products Little Affected by Macro Policy

Bob Wisner and Gene Futrell

Domestic demand for products of the grain-livestock industry is rather stable, growing slowly with population, shifting to some extent by changing consumer tastes and preferences, dietary admonitions and relative prices of meat products, but fluctuating little with the strength of the nation's economy. Recent USDA research along with observations from the 1970's and early 1980's suggest that domestic demand for meat is slightly but not strongly influenced by the level of U.S. economic output. The quantity of meat consumption during the current recession was nearly stable perhaps through growth of built-in U.S. income transfers such as food stamps, unemployment compensation, social security, and various feeding programs. The index of prices received by farmers for meat animals was also rather stable from 1980 through 1982.

U.S. per capita consumption of all meat has been remarkably stable throughout the business cycles of the past 12 years. In 1971, per capita consumption of red meat and poultry was 205.6 pounds per person (retail weight red meat and ready to cook poultry). In 1983, it will be about 204.6 pounds. The record level of per capita consumption was in 1981 at 207.6 pounds per capita.

The consumption patterns of the last decade indicate specific meat purchases are sensitive to relative prices of various meat and poultry products. The mix of red meat vs. poultry varies with cyclical levels of livestock production, but the poultry share has trended upward since 1971. During that time period (1971-1983), per capita beef consumption declined 6.6 pounds along with an 8.2 pound decline in pork consumption. These

declines were offset by a 15.7 pound increase in per capita poultry consumption. The shift from pork and beef to poultry tended to slightly reduce domestic grain feeding from levels that would otherwise have existed, with the likely impact being about 150 to 200 million bushels corn equivalent or slightly less than 4 percent of total 1982-83 U.S. feed grain feeding. More poultry, on the other hand, slightly increased the demand for soybeans and soybean meal over levels that would otherwise have existed. Several factors probably contributed to this trend away from red meat to poultry including relative prices, conversion of pasture to cropland, the economic recession, changing dietary attitudes, and innovations in poultry retailing and the fast-food industry.

A strong U.S. economy and reduced unemployment would tend to increase U.S. demand for meat products some in the years ahead, thus encouraging a small increase in domestic grain feeding. But with U.S. per capita meat consumption at near-record levels of over 200 pounds per person, domestic meat demand appears likely to be much less responsive to general economic conditions than export markets.

While level and mix of meat consumption are major determinants of domestic grain feeding, several other factors also are important. During the 1970's the intensity of grain feeding per meat animal seemed very sensitive to meat-feed price ratios. In the last 12 years, domestic corn feeding has fluctuated from a low of 3.23 billion bushels in 1974-75 when feeding was unprofitable and corn prices averaged $3.03 per bushel to a high of 4.52 billion bushels in 1979-80 when U.S. average farm price was $2.52 per bushel. Amounts fed vary by adjusting livestock slaughter

weights, amount of time beef animals are on pasture vs. in feedlots, extent of culling of breeding stock, substitution of protein meal for grain, roughage feeding and other factors.

U.S. corn feeding in 1982-83 is expected to total 4.5 billion bushels, slightly below the record 4.52 billion bushels fed in 1979-80 but 13 percent above 12 years earlier and 39 percent above the recent low point in 1974-75. Combined feeding of the four feed grains is expected to be about two percent greater than 12 years ago.

In addition to the changing composition of the U.S. meat supply, domestic grain feeding has not trended upward because of (1) continued improvements in livestock breeding, (2) better management of feeding operations, (3) development of new growth stimulants in cattle feeding, and (4) increased levels of protein feeding. Soybean meal feeding in the U.S. in 1982-83 is expected to be 45 percent above 12 years earlier.

In short, macro economic policies contributing to a strong U.S. economy will generate only small increases in the quantity of meat the U.S. demands and hence will encourage only a small increase in grain feeding. Thus, domestic increases in utilization of meat and feed grains in a recovery likely will fall far short of utilizing our current excess production capacity.

Incomes in animal agriculture however are very sensitive, to changes in meat prices at the consumer level and to changes in prices for feed. Some U.S. livestock and poultry enterprises suffered significant income loss in 1983 as a direct result of feed prices rising rapidly in response to FOR and PIK.

Feed utilization by livestock began to increase as grain prices fell in Fall '82. By June '83 feed grain prices rose 60% relative to their low's. Feeding margins narrowed sharply but some planned expansion of meat production and future downward pressure on meat animals prices may also have been averted. In the long run livestock volume adjusts inversely with grain price. U.S. meat livestock seem to be about the only flexible component to balance the food equation. It is possible to dramatically curtail feed use by rapidly raising grain prices. However the adjustment causes heavy losses to feeders. The current high grain price is not the result of short grain supply. We are sending a false signal to feeders to curtail feed use. The garbled signal is the direct result of scarce free stocks. Stocks are excessive and locked up but free stocks are artifically small until 1 October '83.

Corn processing into sweeteners, alcohol, etc. has been a strong growth area and will likely expand further in future years but only if several

supportive government policies remain in place. U.S. corn processing and seed use increased by 131 percent from 1971-72 to the current marketing year, rising from 390 million bushels in 1971-72 to an expected record 900 million this season. At the current rate of utilization, this category accounts for 12 percent of the total demand for U.S. corn, up from 8 percent 12 years earlier. Since by-products of the alcohol-fuels industry are largely exported to the European Community and compete there with U.S. corn and soybean meal, these figures modestly over-state the net growth in demand for U.S. crops as a result of increased corn processing. Growth in the corn processing sector appears to be relatively insensitive to the U.S. general economy. Processing corn into sweeteners is strongly influenced, however by U.S. sugar policies including import restrictions and support levels. U.S. sugar supports at 17 to 20¢ per pound (about twice world price levels) and strict quotas as import restrictions have enhanced the competitive position of high-fructose corn sweeteners. Corn processing into alcohol also is strongly related to reduced federal and state road fuel tax policies which encourage the use of alcohol fuels. Future growth of the alcohol fuels industry will depend not only on continued fuel tax policies but also on continued unrestricted access to the European Community by-product feed market, where much of the by-product feeds of the alcohol industry are sold.

The need for storage or supply control will probably not be reduced significantly by economic recovery accelerating domestic meat consumption and grain feeding. However, if domestic policy encouraging sweeteners and alcohol-fuel derived from corn were discontinued the need for storage and

supply control might, eventually increase by nearly 1/2 billion bushels or nearly 1/3 the size of 1983 PIK corn payments.

Impact of food policy and promotion

In addition to the small negative effect of national economic policies and the small positive effect of sugar and gasohol policies, three other domestic demand related topics should be examined. What are the impact of recent efforts to curtail government food assistance programs? What is the impact of dietary recommendations to reduce fat and increase cereal and vegetable consumption? Is there a significant potential role in domestic demand expansion for commodity promotional programs?

Food assistance program expenditures for low income families such as food stamps, reduced cost school lunch, etc., totaled $15.8 billion last fiscal year. Their constraint in 1983 probably made only a modest slight contraction in total domestic food demand. Food stamps is the largest costing about $11 billion (and have been reduced 3%) food stamps supplement income to help meet basic nutritional needs of about 32 million individuals in families who are financially needy. Recent reforms have tried to tighten up the administration and limit eligibility only to families and individuals who do not have income or assets to meet food needs. The addition to gross farm income in 1982 from food assistance is estimated at about $1.6 billion about 1 percent of gross but nearly 10% of net farm income.

Relative to $16 billion in total food assistance expenditures, even $1.6 billion addition to net income is small but significant to agriculture. There is of course some "slippage" in food assistance programs just as there is in land retirement. Recipients of food assistance increase total food

consumption expenditure by about 40 percent as much as the value of the food assistance received. Low income recipients make a rational allocation of limited income resources and spend less of income from other sources on food if food stamps are available to them. Analysts estimate 1 billion of the slippage is from high income consumers who spend less on food because their taxes are higher to pay for food stamps.

Cancer, heart disease and obesity concerns have led to new dietary recommendations and guidelines. Farm commodity groups have protested the reduced demand for animal products they expect from these recommendations. The impact on food demands is difficult to document and measure. Recent USDA research indicated that two-thirds of U.S. households changed diets for health or nutrition reasons during the late 1970's. Fifteen to 20 percent of households reported they believe they now consume a diet less high in fat cholesterol. Dietary recommendations are information. Consumption choices remain matters of individual preference. Only clearly harmful additives or contaminated products are restricted from the market by the Food and Drug Administration. The role of government dietary recommendations probably is minor relative to all other information provided consumers about the implication of scientific information. Although Americans eat over 200 pounds of meat which is more than adequate nutritionally this is less than the consumption needed to fully employ all agricultural resources under current weak foreign demand.

New product development, such as boneless cooked ham, and consumer information and educational efforts by the private food industry such as the fast food industry's promotional efforts for chicken probably have more

effect in expanding demand for specific product than dietary recommendation. It seems clear that successful promotion of a particular product may increase demand for that product but the expansion is often a substitution at the expense of some other farm product. The net impact of additional promotional efforts on farm products probably would be very limited. Political and public welfare consequences of public promotion of more domestic meat consumption to reduce need for supply control probably would be highly negative. Private sector product and market development efforts including exports of high value processed products probably offer some potential for expansion of U.S. agri-business employment and increased foreign exchange earnings.

V. Three Alternative Policy Approaches to Managing U.S. Farm Prices and Incomes

Charles Gratto

From many statements about the farm problem and what price and income policies are supposed to accomplish, these four are the recurring themes. 1) Returns to factors of production in the farm sector are not but should be the same as returns to factors of production elsewhere in the economy and the incomes of farm families are below but should be on a par with incomes of non-farm households; 2) U.S. consumers are not but should be thankful and willing to pay more because they have access to a secure and safe food supply at reasonable prices; 3) government farm programs are not but should be efficient, i.e., accomplish goals at minimum cost; 4) benefits of farm programs should not but do get capitalized into land values and should not but do accrue largely to larger than family farms.

Only three general responses are available to the federal government to deal with excess agricultural capacity. One is to fine-tune the present legislation -- public assistance to farmer-owned storage and voluntary supply control by public rental of land. A second response is to reduce government supply management, increase the play of market forces, and support farm incomes by checks from the Treasury. A third pattern is increase government supply control and regulation of production by more spending or perhaps by mandatory quotas of allotments if approved by producers or Congress.

Some specific actions consistent with fine tuning of the existing legislation to reduce cost include: 1) putting an upper limit on the size

of farmer-owned reserve, 2) broadening the $50,000 limit per farm family on land diversion, deficiency payments and payments in kind, 3) lowering the loan rate (up to 10%) for 1984 and freezing target prices at 1983 levels or lowering them, 4) extend the PIK program but limit it to 40 million acres and institute a system of national bidding to save government cost.

The main features of a "reduced government/more demand driven" policy are as follows:

1. Market should clear since adequate stocks have been accumulated. Utilization and production should be planned by the private sector in response to market clearing prices.
2. Direct deficiency payments limited to $50,000 per farm family should be the main government action to protect farm family living to some extent. Land values and net worth would not be protected. Adjustment and free play of prices would clear markets, promote consumption, stimulate exports and curtail excess capacity.

Some actions consistent with the demand driven pattern are: 1) reduce the loan rates to 90% of the variable costs incurred by large commercial farms, 2) phase out export subsidies, limit cost sharing for farmer-owned reserves, land diversion and payment-in-kind, and 3) continue a very aggressive trade promotion, food aid, and export credit stance.

The main features of increased government management of production are follows:

1. Control market supply and production of agricultural products year-to-year to clear grain markets within 10-15% of large efficient

farmers cost of production. Government should own stocks and build or liquidate them to limit season average price variation. Production control would keep stocks below 15 to 20% of utilization. Farm income would be obtained through the market not from the Treasury.

2. Farm production could also be managed for resource conservation but the primary goal would be cost of production with consumer welfare and balance of payment as secondary goals.

Some actions consistent full cost of production by voluntary supply control are 1) expand land diversion payments, 2) target diversion to row crops on fragile lands, 3) retire land where ground water is used for agriculture beyond the sustainable yield load, 4) enough government stocks insure with 95% confidence that prices would stay within 15% of cost of production and 5) the $50,000 limit should be removed.

Below are some possible actions to obtain full cost of production via a mandatory supply control program.

(These programs would depart substantially from past voluntary approaches): 1) land use quotas might be set for all classes of cropland limiting accreage per section of major grain and row crops. 2) No diversion payments. 3) Compliance enforced by aerial photographs and penalties (taxes) assessed to any owners of land planted in excess of quotas. 4) Mandatory marketing quotas in bushels or pounds would be issued to producers of processed products like wheat, soybeans and cotton. 5) Referendum could enact quotas of various sizes and impose penalties for marketing over quota. 6) Excess stocks would be helped by producers as in Canada.

Land production or marketing quotas could be restricted for fragile lands and water use not in the national interest and other goals.

Each of the three patterns sketched here has costs and benefits. Each distributes the costs and benefits in different ways, to different participants, by different mechanisms. Each could result in similar levels of farm prices or incomes, but would have different consumer and taxpayer costs and degree of intervention in agricultural markets. Each poses a different set of consequences for resource conservation, structure of size and number of farms, rural development, transportation, land values, net worth, stability, and agri-business.

In the section which follows the implications of using each of the three patterns are analyzed.

VI-A. Consumers, Taxpayers and Distribution of Costs and Benefits

Arnold Paulsen

The appearance of agricultural excess capacity and falling grain prices since summer 1981 created the opportunity for a massive redistribution (of perhaps $5-10 billion) of income away from producers, especially grain farmers, toward consumers. The 1982-83 storage assistance and supply control were provided at taxpayers' expense. They limited the potential price decline (and hence the transfer) to less than half what it might have been. The intervention at taxpayers' expense raised domestic food expenditures, of course relative to what they would have been. At times of world grain shortage, such as 1972-1975, or at the time of strong foreign demand, as in 1979 and '81, the process worked in the other direction and farm price increases transferred $5-10 billion of consumers' real income per year to producers. During those good times, anticipation of continued high farm prices and continued high land incomes caused land buyers to bid up the value of farmland and the national estimate of equity in production assets increased by 25-40 billion per year and. Over $180 billion of unrealized paper wealth was created in 1974-1979.

Large commercial farmers selling over $200,000 per year produce nearly half of all U.S. farm output. They are very low cost producers and aggressive bidders for farm land for expansion when commodity prices are strong. Some in this group are also, however, very vulnerable to cash flow shortage when farm prices drop. Only a small proportion, about 10% of farmers selling around $40,000 per year have burdensome debts. Significant

off-farm income also may also help them survive during low prices. As a group, small farmers have been less vulnerable to bankruptcy. During the recent downturn large commercial grain farmers heavily in debt at high interest rates were the first to experience cash flow problems. Large commercial farms receive significant benefits from price supports even if they do not participate. Government cash benefits received after October 1982 contributed much to highly leveraged farmers survival in 1982-83.

By July 1982 about 30% of farm borrowers were loaned up to their practical limit and even more grain farmers would have faced cash flow problems in 1983 if grain prices had continued at Fall, 1982, levels. Voluntary or involuntary liquidation however affected less than 1% of farms in 1982.

More liquidation, especially among the highly leveraged farmers, would have occurred in 1983 without the injection of additional government payments beginning in Fall 1982 e.g., diversion and deficiency payments, nonrecourse loans and PIK. The massive 1983 land rental of 80 million acres reduced costs and the need to borrow money. If low prices had continued into 1983 all the land would have been farmed; because of prices above variable costs, however, the value of land and rental rates would have declined. Some land would have been released by large units with credit problems but this land probably would have been taken over by other relatively large units with adequate machine and borrowing capacity. Probably near 50% of production would continue to come from large farms.

Distribution Impacts

Each of the three alternative approaches has distinctly different distribution of the unavoidable costs of carrying current excess agriculture capacity. Without some intervention farmers would suffer almost all of the burden. With current programs the burden is shared among 1) taxpayers, 2) consumers via food prices above market during levels, 3) agri-business via supply control and 4) farmers through prices below cost of production.

With supply control via mandatory controls the cost would fall on consumers and agri-business. Taxpayers could nearly avoid cost for excess capacity if agriculture would accept the discipline and more central direction of agricultural production.

With a more market oriented policy, adjustment costs would be borne by farmers and consumers depending on price levels. In low price periods farmers would bear. In time of shortage consumers would bear the burden through higher food prices. To the extent deficiency payments or other direct payments are made to ease low farmer income the taxpayer will also share in the cost of the program.

The current program seems to require about $15 billion of expenditures annually by taxpayers to protect the capacity of farmers to produce Price supports take real income away from consumers; half of whom earn less than $15,000/year income and little wealth. Fine tuning of present voluntary programs probably could raise income transfer efficiency and reduce taxpayers cost to maintain agricultural capacity. However voluntary programs are expensive, and land unemployment is more expensive than reducing production by not mining so much water or applying so much fertilizer. In

general, surplus accumulation and voluntary supply control of the 1982 and 1983 program-type create a net social loss, i.e. consumers and taxpayers sacrifice more than farmers gain in net income. Farm prices were kept above the market clearing level by storing 50 million tons of the 1982 crop. Consumers were denied about $4.0 billion of available production. In 1983, total production was reduced by unemploying 80 million acres of land. Consumers at home and abroad will be worse off by $5 billion dollars -- less farm goods to be consumed from the U.S. Farm prices at home and abroad will be higher than they would have been, that is above market clearing levels, because of supply control. Total consumer expenditures on 1983 U.S. farm goods were raised $3 to 5 billion as a result and purchase of non-farm goods will be reduced by an equal amount. The costs of 1983 supply control were made at taxpayers' expense of about $15 billion.

Less Food	5
More spent	5
Land Rent	15
Total	25

The total cost to consumers plus taxpayers of the reduced marketing and reduced production may be about $25 billion. Net farm income may increase less than 10 billion. Farm supply will lose income but farm financial stability is improved.

Preventing production rather than storing surplus production should be a cheaper method in terms of taxpayer costs to retire excess capacity. For 1984 it may be possible to save money and prevent production by a voluntary bidding procedure. Among low profit land owners, the cost of renting land

may be less than $1.50 per bushel of excess capacity idled. The cost of interest and storage for 3 years is also about $1.50 per bushel so when stocks get large and the prospect is for storage longer than 3 years, diversion of marginal land should be cheaper. However, land retirement purchased in 1983 probably had a cost of over $3 per bushel of capacity idled. In 1983 the actual potential yield was probably more than 50% of the program yield but the cash payment rates of $1.50 per bushel and the payment in kind rates of 80% of program yield probably paid more than would have been necessary to obtain the particular acres retired.

Only if it were possible to shift away from voluntary programs to mandatory control could the taxpayer cost of income transfer to farms by supply control be reduced significantly. So long as supply control is voluntary, many acres and dollars will be needed to retire our excess capacity. To maintain prices near cost of production is very expensive. For example, if Iowa farmers expect season average corn prices for the 1984 crop to be above $2.65, because that is the loan rate, only a few will offer to reduce corn acreage in exchange for a payment of $1.50 per bushel. However if corn prices were expected to average $2.25, with a 25% chance of less than $1.90 and 10% chance of over $2.50, more acres would be offered at $1.50 but fewer acres would be needed.

In principle, the cheapest tax cost of obtaining full cost of production is if producers accept mandatory controls in a referendum. Compliance acre allotments or production quotas probably could be monitored at reasonable expense today. Aerial photographs could identify excess planting and assessed penalty or tax per acre would be possible. If supply control did

not have to be purchased, the income transfer would be only from consumers to producers.

On the other hand for the "less government/more demand driven" policy, the direction of transfer would be entirely from taxpayer to farmer. If prices were at market clearing level no consumer sacrifice would occur during periods of excess capacity. In the past, taxpayer cost of direct payments has been limited to $50,000 per farm operator family. If so, only partial protection would be offered to large producers. The risk of low prices and excess capacity would fall heavily on the large, lower cost more efficient producers. Consumers would obtain food at market clearing prices. During excess capacity prices would fall below cost of production toward variable cost of efficient operators (perhaps $1.25 for corn). If prices were expected below variable costs it would pay to not plant. The capacity of agriculture would only be partly maintained. Machinery and labor on small farms and part of that on larger farms would be maintained. If transfers via direct payments from the treasury were not extended beyond $50,000 to larger farms, this might create incentive to disinvest, or break up into, additional units.

Cost of direct payments would be zero. With a $50,000 limit, taxpayer's cost would also be limited. The tax cost and big farm limitation of direct payments is feared by agriculture. The fact that limited direct payments would not cover all production capacity means agricultural capacity would not be fully maintained.

VI-B. Impact of Alternative Farm Programs on the Agri Business and Transportation Complex

C. P. Baumel

In 1981 farmers spent $53.1 billion for purchases of production inputs from off-farm suppliers. This $53 billion includes expenditures on farm machinery and trucks -- including operating and repair costs -- fertilizer, chemicals, seed, and manufactured feeds. In addition, the costs of marketing the food beyond the farm gate were $208 billion. These off-farm purchases and marketing costs of $261 billion exceed the 1981 gross farm income of $166.8 billion by almost $100 billion.

During the decade of the 1970s, major investments were made in the agri-business and transportation complex to handle an ever increasing growth in agricultural exports. During the early half of the decade, most agri-business and transportation companies were cautious in their investment programs because of uncertainty over future export growth. However, the growth in exports continued and even accelerated during the last half of the decade and the agri business and transportation industries were faced with increasing demands for grain storage and handling capacity, for farm inputs including fertilizer, chemicals, petroleum and farm machinery, and public outrage at the continuing shortage of rail cars and barges. Encouraged by these growing demands as well as by forecasts of ever increasing growth in grain exports and by generous federal government investment tax credits and low interest loans, the agri-business and transportation complex made huge investments in capacity. By early 1980, however, export growth leveled off and even declined in 1982 and 1983. Thus, the investment decisions of the

late 1970s resulted in large overcapacity of the agri-business and transportation industries. The farm machinery, fertilizer, railroad, and barge industries were particularly placed under great stress from the leveling off and then the decline in grain exports. The farm machinery industry has faced major labor layoffs, plant closings, mergers and near bankruptcies. For the first time in history, agriculture has the "luxury" of excess transportation capacity. About 30,000 rail grain cars currently sit idle and about 30 percent of the barges are either tied up or in "slow down" operations. Some grain elevators are facing bankruptcy because of the heavy burden of monthly payment on leased rail cars that are sitting idle because of reduced grain sales. Some barge companies are hauling grain traffic at below variable cost to avoid the large costs of tying up and storing barges. Given this background, what are the impacts of alternative farm programs on the agri-business and transportation complex?

PIK Program

The preliminary estimates indicate that the PIK program has resulted in the following percentage reductions in crop acreages:

Corn	28
Wheat	11
Cotton	28
Rice	33

These acreage reductions have, of course, resulted in reduced farm input sales during the 1983 planting season. While data on input sales are not available, bank representatives suggest that monthly financial reports indicate that sales of some inputs are not as low as had been expected earlier.

For example, preliminary data indicate that nitrogen sales reductions are significantly less than acreage reduction because farmers applied more nitrogen fertilizer. However, phosphate and potash sales are off sharply. On balance, PIK could reduce fertilizer purchases by 12 to 14 percent. Thus, the PIK program will add to the already depressed conditions in the fertilizer industry which is operating at less than 70 percent of capacity.

Seed sales are expected to decline 13 to 17 percent; however, this reduction could be tempered somewhat by higher plant population plantings and by cover crop plantings. Petroleum sales declines could be tempered somewhat by seeding field work and mowing of diverted acres which are planted to cover crops like oats and legumes. On balance, energy sales are expected to decline on the order of 10 percent.

Farm machinery repair and maintenance expenditures are expected to decline 12 to 15 percent, principally because of reduced usage. However, increased farm income from PIK could temper the decline in farm machinery sales to 2 to 3 percent.

Manufactured feed sales are expected to decline as PIK results in higher grain prices which will increase the cost of manufactured feed.

On balance, the farm supply industries will face sharp reductions in income from PIK which will add to the already depressed conditions of existing overcapacity. A second year PIK program would further depress farm supply sales.

On the marketing side, reduced 1983 production will result in reductions in grain handling, drying, and storage income to the

grain elevator industry which is already burdened with overcapacity. The extent of the decline in elevator income will depend on the yield of the reduced acreage.

PIK will have secondary impacts on the marketing chain. As PIK increases grain and feed prices, livestock feeding is likely to become less profitable which will eventually result in reduced livestock marketings and lower income and sales of livestock marketing and slaughter firms.

On the transportation side, PIK could provide a temporary increase in the demand for rail transportation as grain from existing stocks is moved to deficit areas. However, reduced 1983 grain production and higher grain prices will likely reduce both domestic and export grain sales. The reduced sales will translate directly into further reductions in revenues to the rail and barge industries which are already suffering from declining revenues and a huge oversupply of rail cars and barges.

In summary, the PIK program will undoubtedly have major negative impacts on the farm supply, farm marketing and transportation sectors which made major capacity investments in the late 70s and 1980 to respond to growing demands and government incentives to increase their capacities.

A second year PIK program would also continue to decline in the U.S. share of world grain trade by signaling to the world that the U.S. is willing to make the adjustments in world grain supply. A declining share of world grain trade would add to the major surplus capacity problem of the grain marketing and transportation system.

Tight Government Supply Control Alternative

Stronger government supply controls would have essentially the same types but greater negative impacts on the agri-business and transportation complex as the PIK program. If a tighter supply control program were targeted to reduce production in the most erosive soils and on irrigated areas, the program would tend to force much of the adjustment on these areas. This could result in closing down and perhaps bankrupting many of the farm supply and marketing firms in these areas.

Market Oriented Program

A market oriented program would tend to provide some relief to the agri-business and transportation complex through lower grain prices and higher domestic and export grain sales. This impact would use part of the major overcapacity of the system. However, a market oriented system would still face the problems of high interest rates, a strong U.S. dollar, low worldwide income growth, and major debt problems of many countries.

VI-C. Financial and Structural Impact

Mike Boehlje

A continuation of the current or existing farm programs with some modifications would insulate farmers to some degree from market supply and demand forces. This insulation results in increased income stability for farmers and reduced risk. Consequently, farm incomes do not decline as much as they might in years of excess supply or slack demand, nor do they rise as much as would be possible in periods of excess demand and reduced supply. Since land and other fixed resource values are a function of income, the increased stability in income also results in larger and more stable capitalized values. Capitalized resource values seem to be relatively sticky downward. Any government policy which stabilizes incomes by establishing a floor on the down side results in larger resource values. Land values adjust upward with increases in incomes, but only partially adjust downward with decreased incomes.

Any government policy such as target prices or dairy supports which includes escalator clauses or upward adjustments in loan rates, create a spiral in incomes and hence in asset values. This is not only because higher price supports mean higher incomes, but also because of reduced risk on the downside to income and land value adjustment.

Analyses have indicated that the structural implication of downside security is to favor expansion of large and high equity farming operations but works to the competitive disadvantage of smaller and highly leveraged farm operators. Any support price program that includes land values in the indexing formula could result in significant increases in land values and

relatively more benefits for larger rather than smaller producers. Any modifications in the existing programs such as the $50,000 limitation on payments which was declared not to apply to PIK in 1983 or a 10% lowering of the loan rate and lowering or freezing of the target prices would reduce the price enhancement and asset stabilization benefits of this program. If more fluctuations in incomes and reduced financial stability occurred relative to current more rigid programs, large highly leverage farms would be in the greatest difficulty.

Government payment programs also favor large farms. Only 1 percent of farmers received nearly 30 percent of direct government payments in 1978. Several other studies have shown monetary benefits of earlier public farm programs to be size related. Current price support mechanisms, when effective, also bring benefits in relation to the level of output and size of farm. 1982 PIK payments had no upper limits. Some very large farms thus claimed payments -- as high as $250,000 to $300,000 -- just as during the 1960s.

With market clearing prices under a demand driven type of government program, the potential role of market prices increases. The incomes of large operators in the agricultural sector would be expected to fluctuate significantly more than they have in the past. More market exposure in the future under such an alternative would result in increased financial risk for all agriculture but a higher failure rate on the part of leveraged farmers and much more widely fluctuationg asset values. More variable and uncertain land rents and returns might be capitalized at a lower

rate. If periods of decreasing prices of farmland became more likely, a much less stable and financial resilient agricultural economy would result. The destruction of wealth from capital losses would reduce the equity base and consequently the ability of farmers to obtain debt financing from conventional lenders. This decreased wealth and the increased risk in agriculture would result in more dependence on government credit sources, or require higher interest rates from private sector lenders to provide adequate funds.

Implications of market clearing prices with $50,000 limits on payments would necessitate recognition that financial failure in agriculture (not only on the part of the least efficient, but also on the part of many efficient farmers who happen to be highly leveraged) is acceptable from a public policy perspective. To soften the impact of a policy that is more demand oriented might be to implement a government sponsored adjustment program that would facilitate the dissolution of large farms and the outward migration from agriculture of all who encounter financial stress. Sudden transition would require them to incur substantial liquidation losses. Market clearing prices might also mean the increased risk in agriculture may encourage less efficient production. Some high quality, large farm managerial and other resources would be allocated to risk reduction rather than to increased efficiency and reduced cost and some might leave agriculture.

The third option -- stricter supply control at a price level near the production, would result in more stability in income and resource values than at present. It would promote the trend to large farms and more

financial leverage by farms. The level of incomes and values would depend on how effective and secure farmers found the supply management program and whether the "desirable or acceptable" level of supply and prices provided a profit. The economic implications of either mandatory or voluntary control would be the same. Structural change in agriculture would continue to follow the impacts and trends under the current program. The financial and structural effects are not affected by means as much as price and income results. The increased financial stability under a rigid supply control system would encourage private sector lenders to provide more capital to agriculture at lower rates of interest compared to the riskier environment of a demand driven program.

Supply control programs encourage farm enlargement particularly on farms with underemployed large machine units. As they took land out of production for the direct payments associated with set aside or land retirement programs on their existing unit, these farmers were inclined to rent or buy more land so they could attain a more complete utilization of their machine and labor resources. Too, over a period of time, farm commodity programs provided a source of capital gains to farmers, with the largest gains going to the largest farmers. Cochrane indicates that these gains amounted to $76 billion during the period 1950-1964.

The possibility of an agricultural industry composed of industrialized superfarms is now a possibility in prospect. One half of all fed cattle marketed come from 400 large feedlots and 16,000 poultry producers accounted for 90 percent of annual production in the last year. Other enterprises which are not tied to land could follow a similar route. Even crop farms

which are tied to the land also have eminent prospects of "bigness." A modern 4-wheel drive tractor operated by one person can pull up to 80 feet of equipment behind it.

The main increase in farm size has come from family farms which are already large. While the dialogue has been in terms or a conventional family farm, our public programs servicing farms have favored farm enlargement and a structural change towards supersize family farms.

The decline in real price of machine capital relative to labor gave rise to a push towards larger and fewer farms. Power and machine units have come in increasingly large lumps of capital. The high mechanization and industrialization of livestock production also have come to have high capital investments. Fixed costs of farming have increased accordingly and to attain breakeven and profit levels, farms and enterprises have had to grow larger. This process is not finished. From the very high profits from farming during much of the 1970s, many farmers bought large 4-wheel drive tractors of 200 horsepower and upwards, with accompanying 12-row to 16-row machinery. These large units have high fixed costs and are underutilized on the majority farms where they now exist. This condition maintains a pressure towards further farm enlargement, with only high rental and purchase prices of land holding it partially in check. Of course, the extremely high ratio of capital to labor that now characterizes the structure of agriculture prohibits all but the wealthy from beginning or expanding their farm.

Tax policy also has been structured to better allow large land holdings to be held intact. Both income and estate tax have this tendency. In a somewhat similar vein, the family farm corporation has become a legal tool

for the maintenance of large farms. While farmers often point to the corporation as a threat to family farms, the vast majority of corporations in agriculture are family corporations organized so the family can reduce inheritance taxes and maintain a large land holding. Both the advent of greater use of the corporation and easing of death tax burdens have encouraged the continuation of aggregations of wealth through time in the form of four assets.

Hence, both the public developmental policies and the compensation policies of the last five decades have served as incentives encouraging larger farms. While the preamble to most recent farm policy legislation is laced with statements of protecting the family farm, the legislation typically, even though sometimes unwittingly, has encouraged use of more resources per farm and larger farms. Augmented by relative resource endowments, and prices and technologies which provide scale advantages, it has had the general effect of favoring bigger farms. Our dominant national policies have been towards larger farms -- and not for smaller farms. With a couple of 4-wheel drive power units per farm, Iowa readily could be farmed with 16,000 farms, rather than its current 121,000. Predictions are for a decrease of farms nationally to 1.8 million in 2000 but the potential exists for even fewer but larger farms. The nation's 50,000 largest farms represent less than 2 percent of all farms but produce more than 36 percent of the total agricultural output. If the rest of agriculture were organized as this 2 percent, the nation's output could be produced by 135,000 farms -- or an average of around 3,000 per state. Similarly, the number of farms with sales of over $200,000 now is about 2.5 percent of all farms, but these

farms produce over 40 percent of total output. If all farms were organized like this group, the number of farms would average only 2,000 per state. The largest one-fourth of farms now produce 85 percent of total output. Coffman estimates that 125,000 farms, produced one-half of farm sales in 1974 and that if current size trends continue, 70,000 farms could produce one-half of all farm output in year 2000. In other words, only 140,000 farms, an average of about 2,800 per state, would need to exist.

There are no great scale economies or cost advantages to consumers and society as farms become very large. Scale or cost advantages are largely exhausted by the time Corn Belt grain farms attain 480 acres in size or produce 2,000 swine annually.[1] Cost advantages are small beyond levels such as above and are not important to society when its own food, plus a large amount for export, is produced with less than 4 percent of the nation's labor force and with less than 7 percent of its capital stock. However, just as there are no significant cost economies for larger farms, neither are there any important diseconomies. Hence, as farmers enlarge their units they suffer no penalty through the market in per unit costs and they can increase their personal incomes and capital investment. With farmland prices increasing more rapidly than inflation over the past decade, these investments have given large capital gains.

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[1]For some indications of Cost Economies, see: Chan et al., [3], Crall et al., [7] and Ball and Heady [2].

VI-D. Impact of Farm Structure on Rural Areas

Earl Heady

The structure of agriculture has impacts beyond the farm gate and on into the rural community at large. Capital good intensification of agriculture and the decline in the farm work force and population have been accompanied by a reduced economic and social viability of rural communities. The supply of human services in rural areas has generally declined in quantity and increased in price under the trend to fewer farms and farm families. Our own study indicated that total farm income, rural area employment and income stand to be reduced when farms are larger. The social and economic environment of typical rural communities which lack industrialization opportunities will deteriorate further if farm size makes the leap which is possible under current technologies and farm enlargement possibilities.

Most of the institutions and infrastructure of rural communities was developed around a large number of relatively small family farms. This infrastructure framework may need to be changed in the future. For example, farm-to-market roads established in the Corn Belt many decades back were oriented to 160 acre farms. Is society obligated to maintain the heavy investment in rural roads around every section of land when farms grow to 1,200 and 2,000 acres? The justification seems to melt away as farms become large industrialized enterprises. Similar questions can be raised relative to other public infrastructure investment in rural communities.

Each rural area has economic activities from several national sectors -- farming, transportation, retail, private services and government. These services are somewhat interdependent locally but each is strongly influenced and linked to the conditions and cycles of similar activities in other parts of the country. Price decreases or reduced production or depressions in local business activities have direct effect on owners and workers in agriculture or manufacturing but also have similar but smaller effects on jobs and incomes in related local activities like services, retail, finance and transportation. Supply controls that specifically focus on marginal lands not only will have a different impact on producers in different geographic regions of the U.S. (Corn Belt vs the Southeast, for example), but also on the input supply, processing firms and rural communities in general in these regions. Concentrating the production adjustments in marginal producing areas may accomplish efficiency goals, but will result in significant income distribution and equity issues for farmers and agri-businessmen in these communities.

Policies to Maintain Family Farms

The public could take some of the following steps if it is serious about maintaining a population of efficient and modest sized family farms: the level of price supports could be made to decline with size of farm, dropping to zero at a size beyond which society decides public support is no longer merited. Similarly, levels of direct payments from supply control participation or related sources could have a cutoff for modest sized family farms which are of a scale consistent with the agriclimatic and market conditions surrounding them. A farm size cutoff would be more effective

than a monetary limit of $50,000, as in present legislation. Too, price support and payment benefits could be limited to farms of present sizes. For example, if two 240-acre farms operated by A and B were maintained in operation, they would continue to realize ongoing program benefits. However, if A purchased B's farm, A would be eligible for benefits only on the original unit and not on land purchased from B. There also could be special farm acquisition and credit programs to catalyze the entry of young capital-short for farmers into agriculture. The Beginning Farmer Program of North Dakota, the Saskatchewan Land Bank Program and other "land and homestead acts" for young farmers are examples on a modest scale.

A further strong restraint would be a progressive property tax on land acreage and animal numbers. The strength of the tax in restraining size would depend upon the rate that it increases with size. An absolute upper limit in acres, as already used in some countries, could be used and would be effective. Parallel measures could be used on livestock herds. Finally, a graduated gross sales tax could be levied.

6-E. Impact on Natural Resources Conservation

J. Miranowski

The adequacy of soil and water resources to meet future demands for agricultural output is coming into question. Continuing erosion of top soil resources will jeopardize the long run productivity of many cropland acres in Iowa and across the nation. Likewise, mining of exhaustible water resources, such as the Ogallala Aquifer, and rising pumping costs for irrigation of crops currently in surplus are leading to concern over the feasibility of widespread irrigation.

The choice of farm price and commodity programs has a direct impact on the use of these scarce natural resources both in positive and negative ways. For example, high farm prices from strong domestic and agricultural export demands encourage the cultivation of fragile lands and increased water withdrawals. Low prices and targeted efforts to control output may encourage the retirement of fragile and less productive cropland. Energy, soil, and water conservation could be promoted by judicious supply control during periods of excess capacity but have not been.

The next three sections will attempt to consider the impacts on soil and water conservation resulting from (1) continuing the current program focus, (2) expanding the federal government's role, and (3) placing greater reliance on market forces.

Continuing Current Programs

The current policy efforts both in farm commodity programs and soil and water conservation activities leave room for improvement. 1983 set-aside and paid diversion programs probably had very limited impacts on reducing soil erosion in Iowa but might have had a large effect. Unfortunately, the PIK program announcement came too late for adequate 1983 crop planning. In Iowa, many fields had already been tilled in the Fall of 1982 and conserving crops were not established by many participants. In the absence of growing crops or adequate crop residue to cover the surface, the soil erosion rate may increase on PIK acres because it is essentially fallow cropland. More timely announcement of program opportunities, requirement of residue or timely cover crops, and retirement of the more fragile croplands would be an improvement in current program efforts.

Current program efforts should have a positive impact on reducing water withdrawals and in encouraging long-term national allocation of water supplies in areas where supplies are not recharged.

Efforts are underway by the Administration to reduce expenditures on soil and water conservation programs, especially the cost-sharing components. Such a reduction will only serve to increase soil erosion, all other things equal. An even more serious question involves the cost-effectiveness of current programs. Approximately one-fourth of our cropland base suffers moderate to serious productivity threat from sheet and rill erosion. Yet in a survey of ACP participants, about one-half of the

soil conservation practices were being established on cropland eroding below productivity-threatening levels. Additionally, disproportionate shares of the conservation funds are expended in regions with limited erosion problems and insignificant contributions to agricultural output.

The targeting scheme being adopted by ASCS and SCS to concentrate funding in areas with serious erosion problems is a step in the right direction, but the program is too small and too dispersed. A productivity based targeting scheme for the 5-10 percent of the cropland with the worst erosion problems would be an improvement.

Although better coordination of all farm program activities is to be applauded, cross-compliance between conservation and other programs (e.g., commodity credit) is no panacea. The main limitation is that the farmers responsible for most of the erosion are not necessarily those who would be reached by cross-compliance. For example, operators receiving certain Farmers Home Administration loans would be required to have and implement a conservation plan for their farms. First, relatively few farmers utilize this credit source. Second, eligible farmers on land with minor erosion problems incur limited erosion control costs to participate in the FmHA program. Their counterparts on erosive lands may not be able to absorb the conservation costs, thus foregoing this credit source and conceivably the opportunity to enter or remain in farming. Although this illustration may seem like an isolated case, careful analysis of other cross-compliance possibilities produces similar results.

If an expanded role for government programs is deemed socially desirable, an efficient approach would be to retire the least profitable,

or marginal, cropland. Simultaneously, these same cropland acres are frequently the more erosive areas. Thus, if such a program was developed, especially with a longer term retirement provision, supply could be restrained enough to maintain commodity prices at levels attained by conventional supply control or land set-aside programs. The cost of such a conservation program could be considerably less than the PIK program. Farmers in regions not susceptible to heavy erosion would gain through reduced national grain supplies and higher commodity prices. However, since those regions of highly erodable soils would switch to less intensive farming and would not gain through higher market prices for grain and cotton, they would need compensation by the public to offset their income reduction.

Water conservation efforts suffer from many of the same problems plaguing soil conservation efforts. The proposed longer term land retirement scheme may reduce the rate of depeletion of aquifers and reduce the need to pump irrigation waters.

Greater Reliance on Market

Market equilibrium prices determined in the absence of government intervention may be expected to have a positive long term impact on soil and water conservation. The excess supply problems would be solved by the movement of excess resources out of agriculture, a reduction in cropland tilled, and a decrease in the erosion level. More importantly, the more erosive cropland may revert to pasture or be abandoned for crop production purposes. Current efforts to ensure a "fair" price for agricultural commodities have made it profitable to bring such lands under crop production.

A negative impact of the more market oriented approach is greater anticipated fluctuations in commodity prices and net returns. Such uncertainty may discourage needed investment in soil conserving practices. Yet, if we observe the wide fluctuations in commodity prices under current farm programs, it is unlikely to show more eratic fluctuations.

Grasslands, especially in the Great Plains region, have been converted to irrigated cropland under current farm programs. If market prices are lower under a free market approach, some of thee irrigated lands will revert to pasture. Such adjustments may reduce irrigation water demands and depletion of water supplies.

Energy in Agriculture

Agriculture is both a user and a producer of energy. The potential of agriculture in both capacities is closely tied to the farm policies adopted. Reductions in cropland cultivated either through supply control programs or expansion of market forces will reduce energy demands in crop production. Possibly the latter alternative will cause greater reductions in energy use because it is not accompanied by price support activities, which will generally increase the derived demand for energy.

Although temporarily in a period of liquid fuel price decline, as prices again resume their upward trend, energy saving technologies and substitution of both inputs and outputs will occur. For example, much of the shift to conservation tillage and improved irrigation efficiencies has been induced by rising energy prices. As long as sharp curtailments are not encountered, agriculture should respond to rising energy prices without major disruptions.

Finally, agriculture has potential as a producer of liquid energy or the feedstock for such production. Research with on-farm energy production (e.g., methane, alcohol, biogas) has not demonstrated economic feasibility, given the scale of operation. A more significant market has developed for corn as a feedstock in commercial alcohol fuel production. Yet, this potential is highly sensitive to added government involvement (through tax subsidies, capital investment subsidies, and research support), to the relative price of gasoline, and to the cost of capital financing. On a competitive market basis, only limited opportunities have evolved.

Using corn and other commodities for fuel production has also been proposed to handle supplies produced by excess capacity in the agricultural sector. Such an approach would encounter problems with feedstock supply stability and with reduced international demand due to higher domestic prices. Generally, it must be conceded that the welfare costs of such an approach are high although domestic energy security may be enhanced.

Summary

The downward swing in the business cycle and tight money and other macro economic policies in this country and around the world plus uncommonly good growing conditions are largely responsible for U.S. agriculture being in an excess capacity situation. We should not dismantle our agricultural production capacity. We need a safety net of agricultural policy. But the supply control in 1982 was too small and that in 1983 too large. The Farmer-Owned Reserve (FOR) assisted farmers to store more grain in 1983 than was needed to clear the market at loan rates. FOR overshot the mark this spring. The April-May price of grain to feeders said "save" when the stock reports said "feed." The 1983 supply control idled nearly 20% of our acreage. More control in '82 and less in '83 would have been less damaging for agri business and the livestock industry.

The 1984 loan rates set in 1981 should be revised downward. Livestock feeders have been subjected to wild gyrations in feed grain prices from $3.50 in summer 1981, then below $2.00 in fall of '82, now over $3.00 spring of '83 and probably back down below $2.50 after October 1983.

It seems Federal budget austerity for domestic programs prevented adequate land diversion and supply control in '82. Saving money on land retirement in 1982 was shortsighted. The result was 1982 production exceeded demand and a large volume of money was needed for FOR. It seems "off budget" financing of FOR and PIK allowed these programs to be large while the "on budget," but relatively efficient, land diversion for '82 was eliminated. Per dollar of farm income transferred, FOR and PIK are more expensive than paid land diversion and thus ultimately are politically damaging to financing future agricultural policy.

U.S. agriculture's large capacity is a national asset. Taxpayers, farmers and agri business have built it painstakingly over the years by investment. We need to keep our system of farmers, land, water, agri-business, research and education, railroads, credit, and so on in place. The purpose of the safety net of Agricultural Policy is to maintain U.S. agri capacity ready to function when demand re-expands. Agricultural policy needs to be flexible and ready to stabilize in time. Let's have more far-sighted agricultural policy, more efficient and appropriate to meet the needs of our modern commercialized agriculture which operates in a manner that is very exposed and vulnerable to world business cycles and macro policy.